National Aeronautics and
Space Administration
Lyndon B. Johnson Space Center
2101 NASA Road 1
Houston, Texas 77058-3696

April 1, 2005

Reply to Attn of: EA-05-022

TO: NASA Headquarters
Attn: Associate Administrator, Exploration Systems Mission Directorate

FROM: AA/Director

SUBJECT: Alpha Magnetic Spectrometer Magnet Engineering Test Bed Proposal

The Alpha Magnetic Spectrometer (AMS) Collaboration presented several concepts to you and your staff regarding their offer to use the AMS-02 payload as an Engineering Test Bed at the end of its research mission on the International Space Station. During that presentation and subsequent reviews with Dr. Terri Lomax, the JSC AMS Project Manager (Mr. Stephen V. Porter) was given an action to provide a proposal to take advantage of this opportunity. The "Alpha Magnetic Spectrometer Magnet Engineering Test Bed Proposal" is enclosed.

The proposal reviews the new technologies being developed by the AMS Collaboration, which may be very useful in the Exploration Vision. The concept is for the AMS Project Office to assume responsibility for the integrated superconducting magnet, and provide for ground and on-orbit testing to develop this and other technologies for Exploration. The proposal has identified potential applications of superconducting magnet technology for radiation protection, space energy production, and advanced propulsion. In addition, development and on-orbit testing of cryogenic systems, new active thermal control systems, and other exciting AMS-02 systems offer further benefits.

If the proposal is approved, NASA stands to benefit from this $1.3B payload development already largely achieved and will test, document, and make the data available for future Exploration design.

Thank you for your consideration of this proposal.

for Jefferson D. Howell, Jr. ACTING

Enclosure

cc:
HQ/ Exploration Systems Mission Directorate/T. Lomax
HQ/Space Operations Mission Directorate/J. Mankins
HQ/Mission Operations and Integration Office/M. Sistilli